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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,270	07/17/2002	Joerg Sutter	10191/2266	8811

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EXAMINER	
RO, BENTSU	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/088,270	SUTTER ET AL.
	Examiner	Art Unit
	Bentsu Ro	2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 March 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

FIRST OFFICE ACTION

1. The substitute specification and the drawings are objected to because the disclosure in the specification is inconsistent with the figure shown in the drawing. See the following explanation:

- In the substitute specification, page 4, line 6 recites "for nominal voltage U_{nom} = 13 V", however, none of the drawings shows a legend "U_{nom}".

- Page 4, line 16 calls a setpoint "$PWM_{setpoint}$", however, none of the drawings shows a legend "$PWM_{setpoint}$".

2. Drawing corrections are required as follows:

In Fig. 1, label the function of each box. For example label box "STE" as "control unit"; box "KE" as "correction unit"; and box "EST" as "output stage".

Formal drawings are required.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 8-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogasawara US Patent No. 5,170,106.

Before explaining the rejection, the examiner has the following comments:

- Both applicant and Ogasawara do not show the structure of electronically commutable motor. Thus, it is believed that the type of motor is irrelevant to the control circuit, whether it is an electronically commutable motor or a commutator motor.

- Applicant does not show how the voltage supplied to the motor is controlled. In fact, applicant does not show any circuitry at all. Applicant only shows a desired result and a simplified block diagram of Fig. 1.

- Ogasawara's Fig. 3 shows a complete control circuit for controlling PWM to the motor, whereas Fig. 2 only shows a portion of the protecting circuit.

- There are similarity in Ogasawara's drawings and applicant's drawings. Ogasawara's Figs. 4(a) and 5 are respectively similar to applicant's Figs. 3 and 2.

Claims read onto Ogasawara's teaching as follows:

The claims:	**Ogasawara's teaching:**
Claim 8. (New) An electronically commutable motor comprising:	see Figs. 2 and 3 circuits;
output stages feedable from a supply voltage source; and	Fig. 3 shows a (+) voltage source supplied to the microcomputer 30 or CPU 14, which (+) voltage source is a supply voltage source; the output of the CPU 14 provides a voltage to the motor M, therefore, the output of CPU 14 is an output stage;
an electronic control unit for controlling the output stages using operating PWM control signals,	Fig. 2 shows a motor control device which is an electronic control unit; the Fig. 2 circuit includes a gate circuit 50; the gate circuit 50 is connected to the CPU 14 for controlling the CPU 14 using PWM control signals; Fig. 3 shows a similar arrangement;
a pulse width of the control signals being reducible as a function of a magnitude of a supply voltage and a specified setpoint	Fig. 2 shows a monitor of supply voltage using voltage divider resistors wherein Eb represents the supply voltage; a specified setpoint can read onto : (1) the voltage level at the minimum point of chopping wave of the chopping wave generator circuit 44 (the reference 44 is missing in Fig. 2), see Fig. 4; it is noted that the set point disclosed by applicant's Fig. 1 is a PWM-set point which is same as the minimum level point of chopping wave generator circuit 44 of Ogasawara; or

	(2) the "T0" shown in Fig. 5; the claimed *"pulse width of the control signals being reducible as a function of...."* is repeatedly described in the text, for example, see column 5, lines 1-6 and 17-22;
such that the motor is protected against overloading,	see title;
the control signals being determined by a specified operating setpoint	the minimum level of chopping wave generator circuit 44 determines the starting of the PWM width, see Fig. 4;
up to a nominal voltage of the supply voltage,	the nominal voltage appears to be the Eb1 of Fig. 5; From Fig. 5, there is no curve showing the PWM control until the motor voltage of Eb1; above Eb1, the PWM is under controlled; thus, Eb1 is equivalent to the minimum point of the chopping wave;
the pulse width of the control signals being reducible in linear or nonlinear proportion to an increasing supply voltage only upon exceeding the nominal voltage.	same as above explanation.
Claim 9. (New) The motor according to claim 8, wherein the pulse width is reduced at an increasing rate in proportion to an increasing specified setpoint	when the frequency (or rate) of the motor voltage chopping wave increases, the pulse width reduces;
and an increasing supply voltage.	the Eb increases, the pulse width reduces, see Fig. 4.
Claim 10. (New) The motor according to claim 8, further comprising a correction unit assigned to the control unit that delivers, to the output stages, the control signals	the correction unit reads onto the operational amplifier 46 of Fig. 2; the output of operational amplifier 46 is connected to the CPU 14, the CPU 14 delivers PWM voltage to the motor;

determined according to the specified setpoint,	again, the width of the PWM is determined by the level of the chopping wave generator circuit 44;
either unchanged	when Eb is unchanged, the PWM width is also unchanged;
or as reduced control signals, as a function of the magnitude of the supply voltage.	see text or column 5, lines 1-6 and 17-22.
Claim 11. (New) The motor according to claim 10, wherein the control signals are delivered unchanged to the output stages until reaching the nominal voltage,	this function is controlled by the CPU 14; column 6, lines 29-32 states that *"A rated voltage can be supplied substantially to the motor, so that the motor may operated generally with its original characteristics."*; from the statement, it is clear to the examiner that the motor is supplied with a rated voltage and correction will not occur until the rated voltage is reached or over; the rated voltage is a nominal voltage as claimed;
the pulse width being reduced according to a setting provided by the correction unit only when the supply voltage begins to increase.	another way to view this embodiment is from Fig. 4; Fig. 4 shows a chopping wave (the triangular wave) and a motor voltage Eb, if the motor voltage Eb is under the chopping wave, a full width of pulse is outputted; however, when the motor voltage Eb moves upward after passing the minimum point of the chopping wave, the PWM width reduction starts to occur; again, the nominal voltage reads onto the Eb voltage at the minimum point of the chopping wave.
Claim 12. (New) The motor according to claim 10, wherein the correction unit is integrated into the control unit, which delivers the control signals to the output stages, either unchanged or with reduced	Same as previous explanation.

pulse width, as a function of the magnitude of the supply voltage.

Claim 13. (New) The motor according to claim 8, wherein the reduction of pulse width of the control signals takes place as a function of a speed of the motor.	The motor speed is a function of the supply voltage Eb; the PWM width is also a function of the supply voltage Eb; thus, the PWM width is a function of the motor speed.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 703 308-3656.

November 10, 2003

Bentsu Ro
Primary Examiner